

Cooling Capacity
11.6kW - 193.0kW

Heating Capacity
10.8kW - 213.0kW



Air Cooled Packaged Air Conditioning

Giving you complete control





More than just another air conditioning company.

temperzone is dedicated to pioneering innovative new technologies and creating market-leading, easy-to-use solutions that offer the customer and user complete control.

When spaces are wide and open, it's time to rely on temperzone ECO Air Cooled Air Conditioning Rooftop Packaged units*

Combine a large commercial floor space and constantly changing cooling or heating loads and you will have a climate control challenge that temperzone's ECO Air Cooled technology can cope with.

Increasingly the preferred option for major supermarket and home improvement store chains across Australasia, our highly responsive ECO Air Cooled system is a premium package design which can be relied on to keep customers comfortable.

Complete package units designed to connect to duct networks, they range in capacity from 11.6kW to 193.0kW and offer a wide range of air conditioning solutions.

They can even be used for smaller commercial applications and multi-storey buildings with appropriate duct design.

Why those in the know are making the switch

While chilled water installations have been used to air condition commercial spaces, developers are increasingly moving to the temperzone Air Cooled alternative.

Unlike complicated chiller or VRF units, Air Cooled units can be installed quickly and easily, enabling project cost savings.

Due to the use of a variable capacity compressor, "EC" fans and electronic expansion valves controlling refrigerant flow the temperzone ECO Air Cooled package units are economical and efficient in comparison to a chilled water system.

This means the ECO Rooftop Packaged AC system can form an important part of a sustainable energy strategy.

* Refer to Technical specification for ECO series Range

A smart in-store operator

A responsive and adaptive solution, temperzone's ECO Air Cooled system can adjust its own cooling or heating capacity in accordance with changing cooling/heating loads.

Thanks to a high-tech, variable capacity compressor the temperzone ECO unit adapts to suit the requirements in the occupied space load. It works hard only when needed, all the while offering the ability to provide comfortable conditions.

Featuring simple control technology, our system is easy-to-use.

Other benefits

- The ability to operate within specific time periods, as well as 24-hours-a-day.
- Quiet mode for low outdoor noise levels, making it ideal for buildings located near built-up residential areas.
- Ease of servicing.
- Reliability and simplicity of design.
- BMS compatibility.
- The ability to remotely monitor performance parameters.
- Outdoor fans that can operate within a wide ambient temperature range.
- The ability to use cool outside air to cool an indoor space during favourable weather conditions, thus eliminating the need to activate the compressor.





HOT		COLD	
Americano	2.50/3.25	Iced Americano	3.25
Cafe Latte	3.25/3.75	Iced Latte	4.25
Cafe Mocha	3.75/4.25	Iced Chai Latte	4.75
Espresso	2.50/3.25	Iced Tea	3.25
Macchiato	2.75	Juice	1.50
Con Panna	2.75	Mineral Water	2.50
Cappuccino	3.25	Raspberry Rose	4.00
Press Coffee	4.00	Lemonade	
Hot Chocolate	3.50/4.00		
Chai Latte	3.75/4.25		
Tea Latte	3.75		
Loose Leaf Tea	2.75		
		Extra Shot	.75
		Breve	.50
		Misto	.50
		Vanilla	.50
		Soy	.50

Why call temperzone?

As innovative market leaders in air conditioning technology development, temperzone is ideally positioned to play a partnering role in commercial projects and to ensure the selected ECO Air Cooled units will meet the project requirements.

All temperzone units are designed, manufactured and supported locally, readily available and with easily accessible technical support.



Tech Specs



Air Cooled Packaged Units

Efficiency and Comfort

High levels of comfort and energy savings can be provided regardless of climatic conditions.

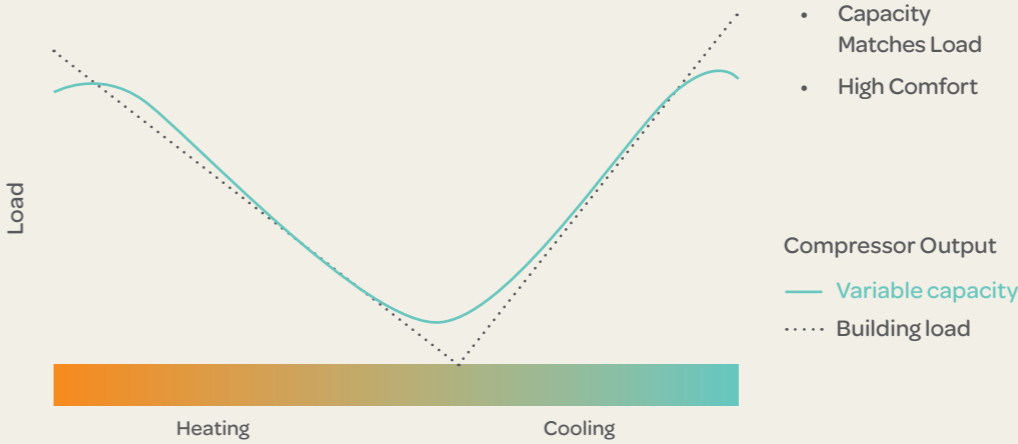
Load Response

The use of variable capacity compressors allows a precise load variation response. High response levels to current load conditions are further guaranteed using Electronic Expansion Valves and variable speed control of the indoor and outdoor fans.

Controls

BMS connectivity or Third-Party control compatibility revolutionises installation, offering a viable alternative to chilled water and VRF installations.

Variable Compressor Matches Supply and Demand



* Contact temperzone on % of fresh air

ECO Advanced Variable Technologies

Compressor

- 40-100% continuous modulation enables wide capacity range
- Better humidity control at low capacity

See figures 1 - 2

Fig1

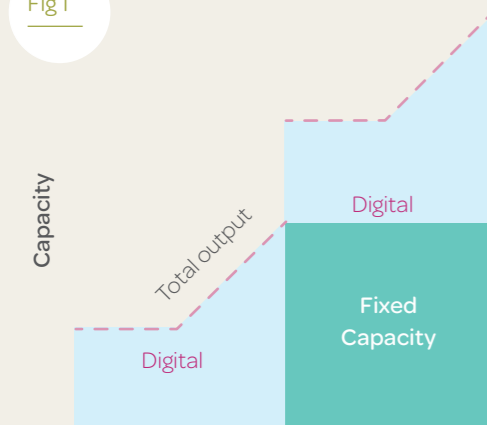
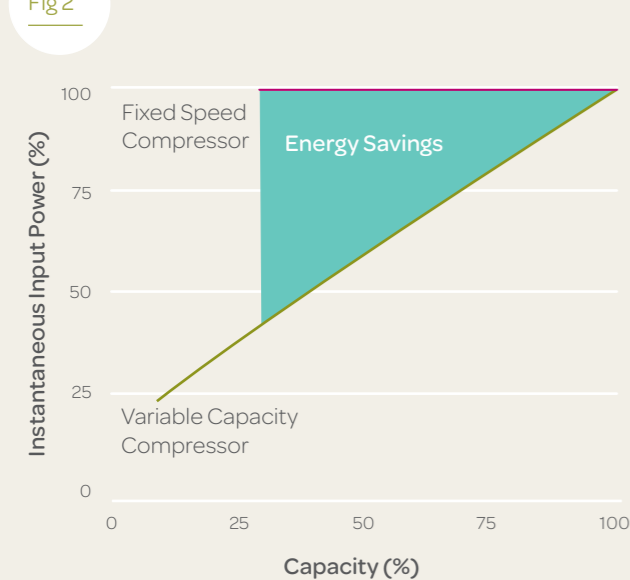


Fig2



EC Fans

- Variable speed EC fan with variable system capacity
- Superior fan efficiencies with EC fans
- Increased energy savings at part load conditions with variable 0-10VDC control signal

See figure 3

Fig3

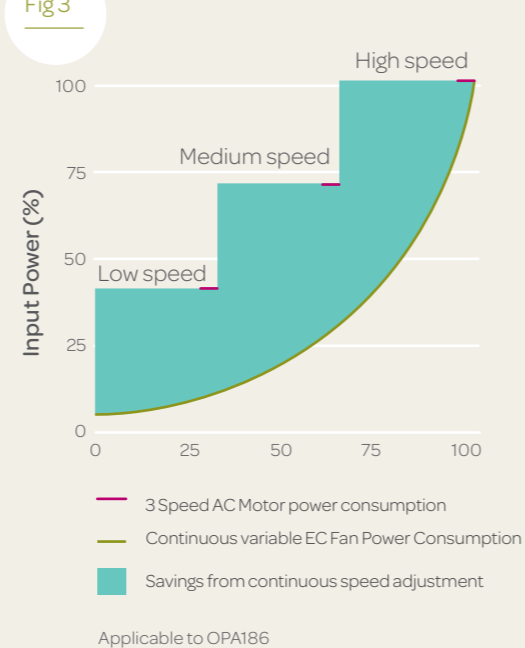
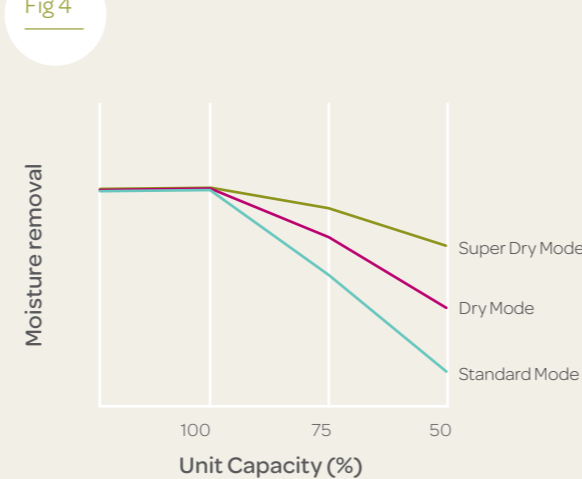


Fig4

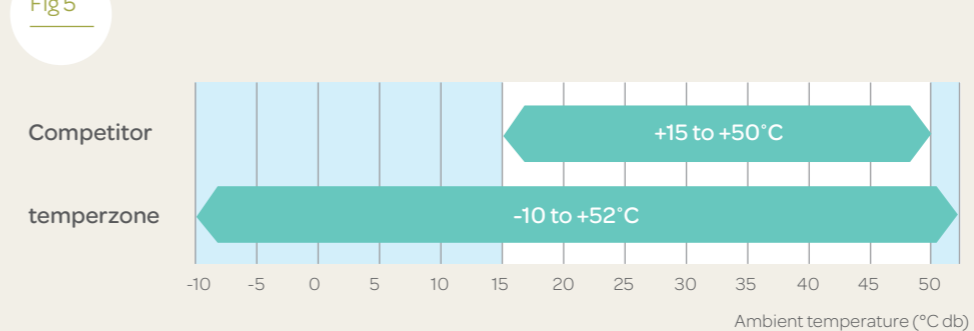


Variable Condenser Fans

- Extended system operating envelope with fully modulating head pressure control
- Increased energy savings at part-load conditions with integrated speed control
- High fan reliability with soft starting and low air noise

See figure 5

Fig5



Electronic Expansion Valve

- Optimum control of superheat at varying load for outstanding comfort with indoor air temperature and humidity control
- Increased efficiencies by lowering head pressure and optimum feeding of heat exchanger coils

See figure 6

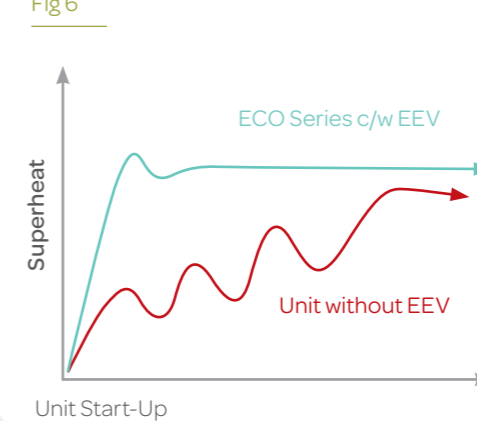
- Dry Mode or Super Dry Mode is available for increased dehumidification, where high humidity may be an issue

See figure 4

*OPA ECO Series have additional dehumidification modes available where high humidity may be an issue.

* Contact temperzone for Application

Fig6



Air Cooled
Packaged Units

ECO Features



Air Cooled
Packaged Units

Efficiency

- Variable capacity system
- High efficiency indoor EC fans
- Variable speed condenser fans
- Economy cycle option*
- Electronic expansion valve
- Generously-sized epoxy-coated evaporator and condenser coils
- Advanced rifle bore copper tubes
- Foil face polyethylene insulation
- Intelligent Defrost Cycle



Control

- UC controls
- Precise temperature control
- Additional de-humidification modes available*
- BMS Connectivity
- Third-Party control integration

Versatility

- Flexible handling configurations
- High ambient application, reliable operation up to 52°C
- Low ambient cooling reliable operation down to -5°C
- Low ambient heating reliable operation down to -15°C
- High outside fresh air applications*
- Wide cabinet colour range*
- Louvered coil guards for outdoor coil protection
- High static indoor up to 450Pa*
- Powder coated panels to withstand 1000-hour salt spray test
- Filter cavity with inbuilt filter slides
- AS1530.3 compliant insulation



Installation

- Ease of wiring
- Service GPO available
- Individual motor protection
- Adjustable indoor airflow control
- Easy maintenance with access panels or access doors
- Optional WiFi Service Unit*

* Refer to temperzone for application

Control

temperzone's UC control system makes it easy for an optional thermostat to control the unit and maintain the space at a prescribed temperature.

Controlled via an easy-to-use, wall-mounted controller with optional TZT-100 LCD display panel, the system can be upgraded with features including remote temperature sensors.

- 7-day programmable with 2 events per-day
- Night set back
- After-hours run timer
- Averaging temperature sensor
- Time clock or manual operation

Additional UC features

- Remote On / Off
- Remote Common Fault Alarm
- HP/LP Safety
- Discharge line safety temperature thermostat

No matter how simple or complex the climate control requirements, temperzone can offer a unit that can be integrated into the building air conditioning infrastructure.



**Air Cooled
Packaged Units**



Air Cooled
Packaged Units

temperzone's ECO design is
one of the most energy-efficient
on the market.

With the right application and selection advice, energy
modelling shows temperzone Air Cooled technology can
lead to running cost savings of **up to 60%**.

Using ACADs Camel and ACADs Beaver software, annual energy consumption was
modelled on a large office supply retailer in Sydney with a total heat load of 148kW.

Energy modelling was based on a system consisting of 3 x OPA 550 rooftop units
or their R22 equivalents, with economy cycle dampers fitted. The objective was to
examine the energy efficiency of three comparative technologies:

- R22 units with a scroll compressor
- Standard OPA units
- ECO OPA units*

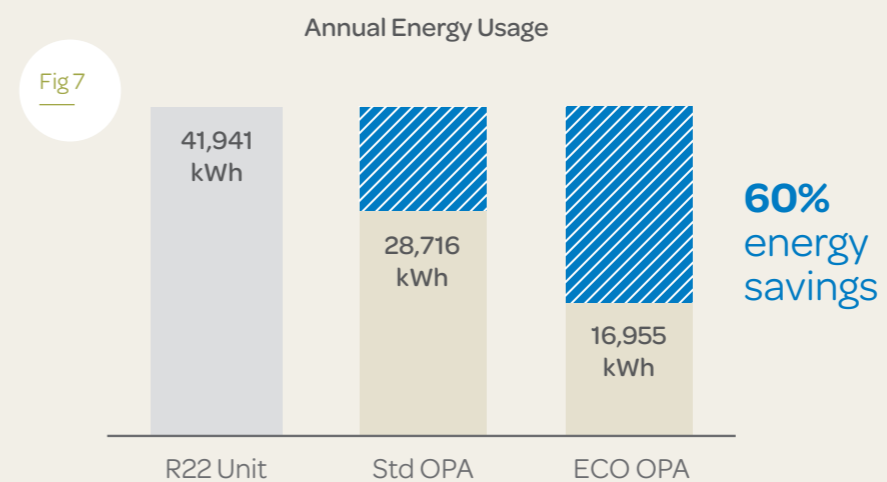
Hours of operation 6am to 10pm, 7 days.

Up to 60% Savings when Replacing Old Technology

The results revealed the R22 system consumed 125,824 kWh, the Standard OPA
system 86,149 kWh, while the ECO system consumed only 50,866 kWh annually.

When we examine individual unit energy consumption we see a substantial 60%
energy savings which the OPA 550 ECO achieves over the R22 unit.

See figure 7



* OPA 550 ECO unit features R410A, Plug Fans, EEV and Digital Scroll Compressor

Energy Savings

With the right application and selection advice,
temperzone ECO Air Cooled technology can
lead to substantial running cost savings.

Upgrading air conditioning infrastructure generally involves a process
of either:

1. Replacing old technology or
2. Making a choice between competing modern technologies
(STD vs ECO)

Up to 60% Reduction in Greenhouse Gas Emissions

The energy modelling study revealed the retailer could reduce carbon emissions by **65.2 tonnes** annually with ECO units.

While HVAC is essential for creating comfortable and safe working environments, in Australia it's also been estimated to account for 45% of energy usage and 63% of greenhouse gas emissions.

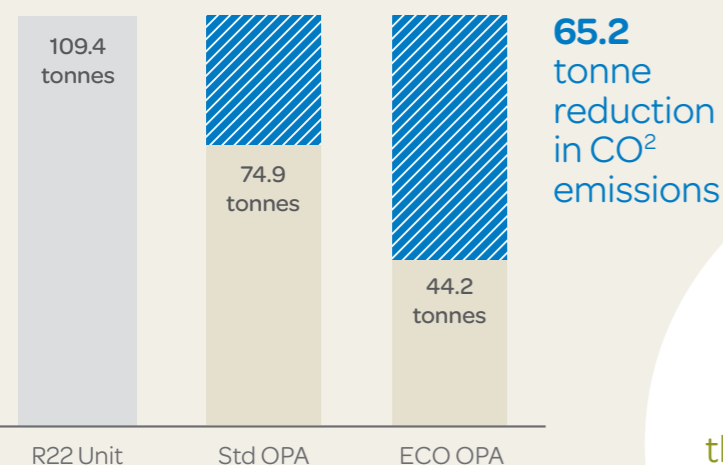
With such serious environmental considerations at stake, system design and equipment selection is critical when replacing equipment and planning new constructions.

Referencing the emission factor of 0.87 we calculated the significant reduction in carbon emissions achieved by replacing old R22 units with ECO units for our retail store - 65.2 tonnes!

See figure 8

Fig 8

Annual CO² Emissions



Our energy study revealed that replacing R22 units with ECO units throughout 50 stores would reduce CO² emissions by **48,910 tonnes** over 15 years.

temperzone's ECO design has the potential to save you considerable operating costs

Your business could potentially save hundreds of thousands, if not millions, of dollars by utilising temperzone ECO technology across your network.

The cost savings generated in our single retail store over the 15 year product life expectancy of our air conditioning units was substantial.

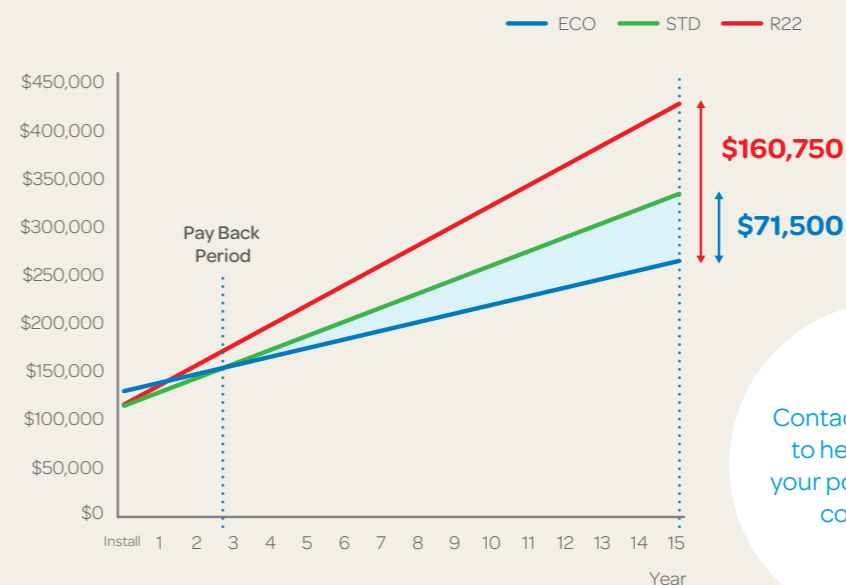
The study revealed a difference in lifetime cost of ownership** between R22 and ECO units of **\$160,750**. This represents the significant savings which can be attained by replacing old R22 units with ECO technology.

In choosing to install ECO units over Standard units the lifetime cost of ownership** savings were **\$71,500**. Lower running and maintenance costs meant recovering the extra capital and installation cost of fitting ECO units was just over two and a half years.

See figure 9

Fig 9

Retail store lifetime cost of ownership



Contact temperzone to help determine your potential project cost savings.

* Electricity cost based on \$0.15 per kWh

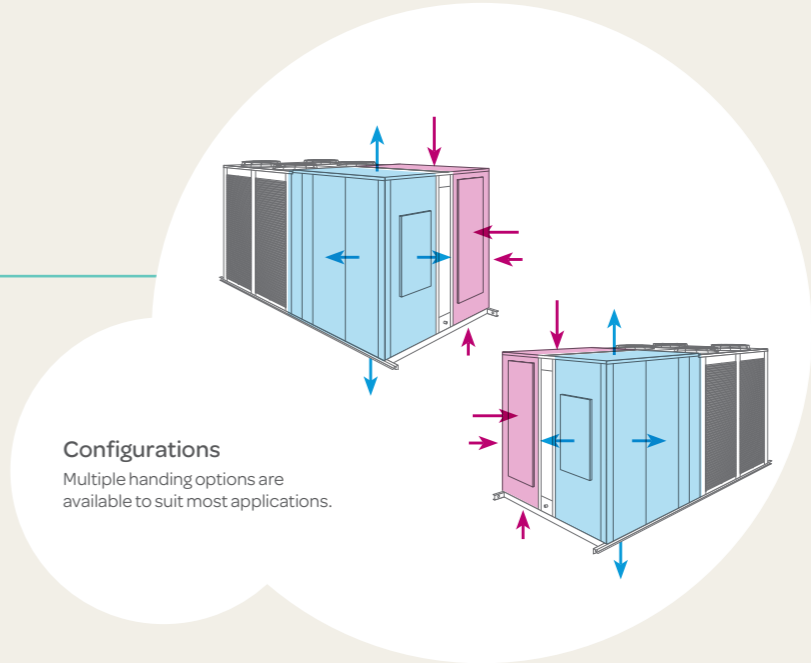
** Includes mechanical systems cost (provide/install), yearly service/maintenance costs, and yearly running costs*.



Air Cooled
Packaged Units

ECO Range Options and Features

The range of available temperzone options allows you to completely customise your unit, giving you flexibility and ultimate control.



Air Cooled
Packaged Units

OPA Series									ECO	ECO	ECO	ECO	ECO		
Model	OPA 116	OPA 161	OPA 186	OPA 201	OPA 242	OPA 294	OPA 340	OPA 370	OPA 465	OPA 550	OPA 705	OPA 855	OPA 960	OPA 1370	OPA 2000
Adjustable Indoor Fan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Variable speed Condenser Fans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BMS Connection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Epoxy Coated Coil															
Evaporator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condenser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Economy Cycle Kit	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Outside Air Kit	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Variable Compressor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Fixed Compressor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EC Indoor Fan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Compressor Soft Starter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Optional Panel Filters															
50mm	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
100mm	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Handing Options															
Supply Air	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Return Air	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

☒ OPTION
☐ STANDARD

OPA Range Technical Specifications



Air Cooled
Packaged Units

OPA Series								ECO	ECO	ECO	ECO	ECO			
Model	OPA 116	OPA 161	OPA 186	OPA 201	OPA 242	OPA 294	OPA 340	OPA 370	OPA 465	OPA 550	OPA 705	OPA 855	OPA 960	OPA 1370	OPA 2000
Total (Gross) Capacity kW*															
Cooling	11.6	16.1	18.6	20.0	23.5	29.5	34.0	39.1	44.9	54.6	69.7	85.1	96.0	137.0	193.0
Nett (Rated) Capacity kW*															
Cooling / Heating	11.33 / 10.8	15.55 / 14.4	18.2 / 16.2	19.76 / 18.08	22.34 / 22.1	28.3 / 27.2	32.5 / 30.1	36.9 / 35.6	43.9 / 41.1	52.9 / 53.4	67.9 / 67.5	79.4 / 78.0	87.9 / 90.0	130.0 / 135.0	184.0 / 213.0
EER/COP*															
EER* Cooling	3.35	3.24	3.17	3.14	3.19	3.21	3.31	3.23	3.22	2.93	3.30	3.10	2.99	3.16	2.81
COP* Heating	3.58	3.23	3.44	3.33	3.39	3.58	3.59	3.48	3.62	3.35	3.75	3.28	3.40	4.02	3.55
Power Supply															
Power Supply	3 Phase - 342 - 436V 50 Hz							3 Phase - 342 - 436V 50 Hz							
Run Amps / Phase (A/ph.)															
	9 / 5 / 5	11 / 7 / 7	12 / 8 / 8	13 / 9 / 9	13 / 10 / 10	18 / 15 / 15	17 / 20 / 17	20 / 24 / 20	20 / 26 / 20	29 / 38 / 29	33 / 40 / 34	45 / 52 / 45	58 / 66 / 57	75 / 83 / 83	125 / 125 / 125
IP Rating															
	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44
Compressor															
Number per Unit	1	1	1	1	2	2	2	2	2	2	2	2	2	4	4
Type	Hi Efficiency Scroll	Hi Efficiency Digital Scroll	Hi Efficiency Digital Scroll	2 x Hi Efficiency Scroll	2 x Hi Efficiency Scroll	2 x Hi Efficiency Scroll	2 x Hi Efficiency Scroll	2 x Hi Efficiency Scroll	1 x Hi Efficiency Digital Scroll / 1 x Hi Efficiency Scroll	2 x Hi Efficiency Digital Scroll	4 x Hi Efficiency Scroll				
No. of Refrigeration Circuits	1	1	1	1	2	2	2	2	2	2	2	2	2	4	4
Refrigerant	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A
Fans															
Indoor	Centrifugal / EC Direct Drive	Centrifugal / EC Direct Drive	Centrifugal / EC Direct Drive	Centrifugal / EC Direct Drive	Plug Fan	Forward Curved	Forward Curved	Forward Curved	Plug Fan	Plug Fan	Plug Fan	Plug Fan	Plug Fan	Forward Curved	Forward Curved
Outdoor	Vari Speed Propeller Type							Vari Speed Propeller Type							
Airflow															
Nominal**	650	815	1000	1100	1400	1600	1800	2100	2400	2800	3700	4200	4750	7500	9500
Maximum	800	1000	1200	1225	1600	2100	2200	2500	3330	3330	5100	5100	5100	8500	10500
Noise Data***															
SPL @ 3 Metres	55	55	59	59	62	57	65	65	68	65	63	63	63	70	62
Overall Dimensions (mm)															
Length	1110	1160	1160	1230	1675	1780	2058	2080	2344	2344	2902	2902	2902	4668	6248
Width	1200	1200	1200	1200	1567	1490	1625	1670	1949	1949	2149	2149	2149	2425	2430
Height	915	1070	1070	1175	1375	1500	1500	1550	1634	1792	1859	1859	1859	2377	2430
Weight (kg)															
Nett	193	225	235	270	443	516	631	662	798	878	1105	1133	1129	2000	3070
Shipping	229	266	276	325	513	595	740	775	880	960	1193	1221	1217	2180	3220

NOTES:
* To AS/NZS 3823 conditions
** Supply Airflow at Nominal Conditions
*** Noise Data measured to BS 848.2: 2014 - Installation Type A - measured in decibels re 1 picowatt
**** Units comply with MEPS & or the requirements on the NCC

Sydney: (02) 8822 5700

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Adelaide: (08) 8115 2111

Perth: (08) 6399 5900

Jakarta: (62) 21 2963 4983

Brisbane: (07) 3308 8333
1800 897 253

Launceston: (03) 6331 4209

Singapore: (65) 6733 4292

Melbourne: (03) 8769 7600

Auckland: (09) 279 5250

Shanghai: (21) 5648 2078

Wellington: (04) 569 3262



temperzone.biz

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